# ASSESSING PAY EQUITY WHEN MAKING HIRING AND PAY DECISIONS

Trina Poole
South Carolina Department of Administration
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## Problem Statement

The Division of State Human Resource's (DSHR) mission is "to partner with our customers to ensure excellence in human resources, and to improve agency performance. We support state agencies concerning human resources issues through consultation and oversight, professional development, and alternative dispute resolution. As agencies adapt to changing environments, our team of experienced professionals can offer advice and services customized for your agency to help your staff:

1. Anticipate and plan for workforce needs now and in the future;
2. Recruit, develop, and retain the most talented employees to meet your mission;
3. Develop sound HR policies and procedures, and effectively interpret controlling laws, regulations, and policies;
4. Evaluate the effectiveness of your organizational structure and processes to maximize productivity; and
5. Mediate workplace matters."[1]

Recent national trends show us that pay equity among various demographic groups is a growing concern. As the advisor of the human resources functions in state government, it makes sense that DSHR would lead this initiative to first determine if pay inequities exist in

[1]Division of State Human Resources. Message from the State Human Resources Director. (n.d.). Retrieved from www.admin.sc.gov/humanresources

South Carolina state government and if so, to establish the necessary steps to stop perpetuating the pay disparities.

## Data Collection

The data collection efforts for this project consisted of four areas:

1. A survey of HR leaders across various sized agencies representing a diverse population of functions within the state;
2. A survey of participants in the National Compensation Association of State Governments (NCASG) regarding new hire pay practices;
3. Statewide data from our HR systems of record to include six diverse job classification groups and several other variables; and
4. A collection of articles and publications surrounding this topic from reputable sources.

By surveying human resources leaders across various sized agencies, the goal was to gain a better understanding of the different methods agencies utilize when making hiring or promotional pay decisions. Further, to learn if agencies are proactively taking steps to maintain equity and if any disparities exist, why. A brief four question survey was created using an online survey tool, Survey Monkey. The survey questions are listed in Appendix I.

Next, the goal was to gain a better understanding of how other states manage new hire pay practices. A survey was created by the state of Pennsylvania and as a participant, South Carolina was able to benefit by receiving the results. The pertinent survey results are listed in Appendix II.

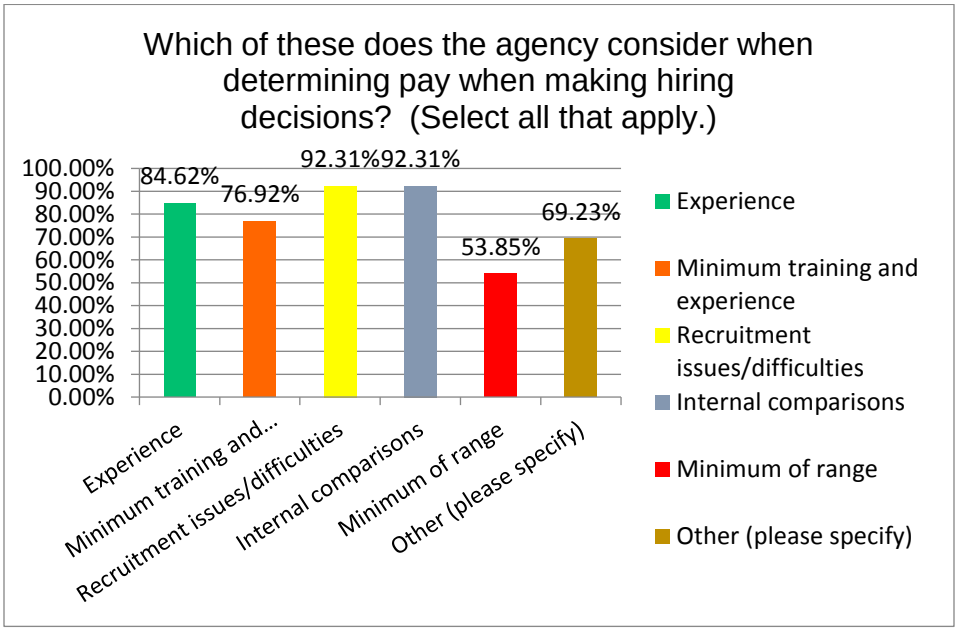
Gathering information from our systems of record, the South Carolina Enterprise Information System (SCEIS) and Human Resources Information System (HRIS) was necessary to analyze the current

state of equity. Information such as job classification, gender, ethnicity, annual salary, education, and years of service was gathered and explored.

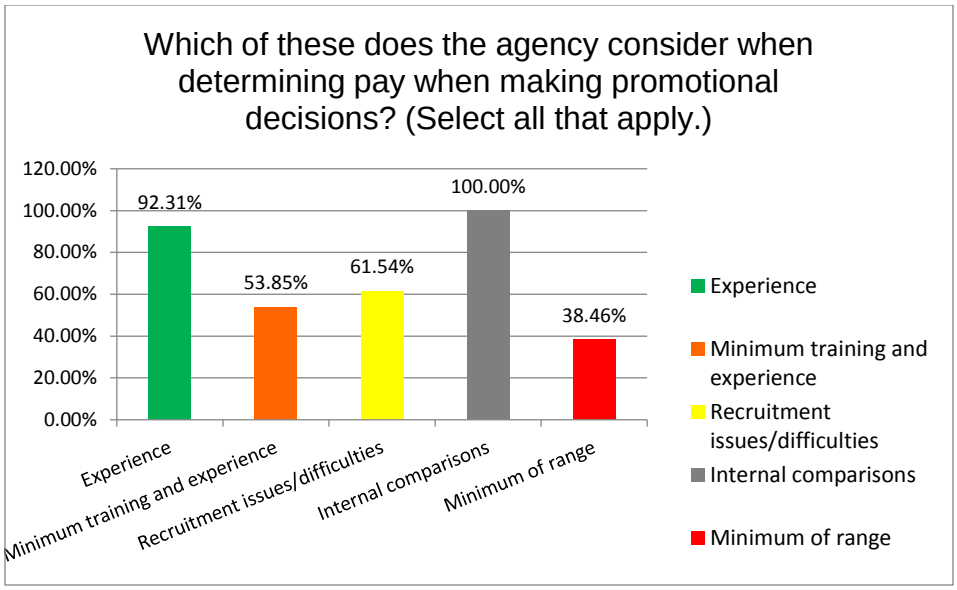
Finally, a thorough review of reputable articles and websites to include the Society for Human Resource Management (SHRM), Glassdoor, the United States Department of Labor, and various articles and publications was completed to gain a well-rounded understanding of this subject.

## Data Analysis

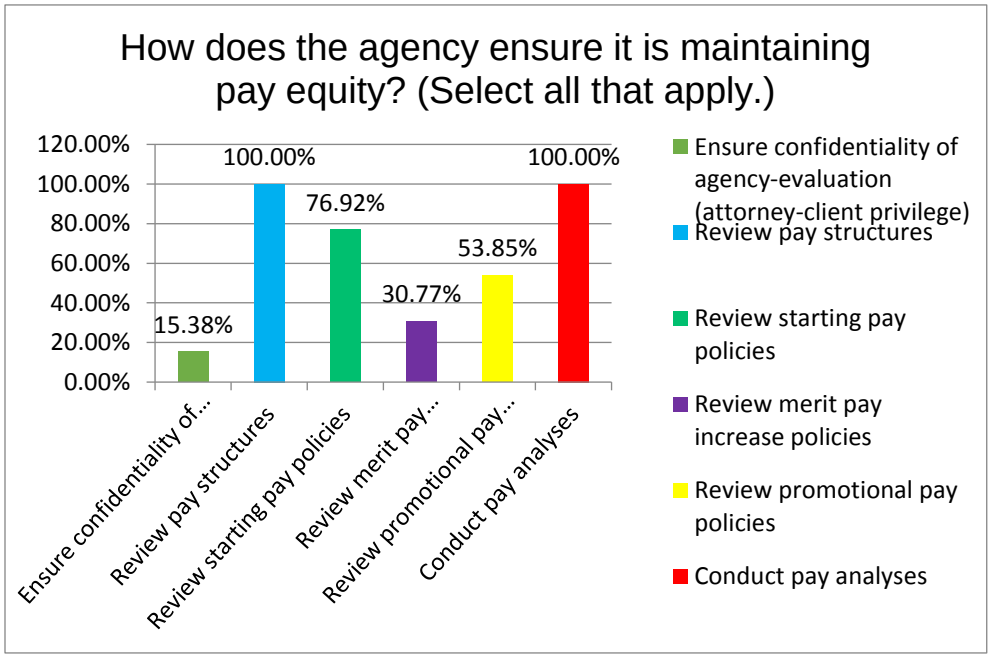
The survey to human resources leaders confirmed several speculations yet taught some other aspects as well. The top three areas of consideration when determining pay for hiring decisions are: experience, recruitment difficulties, and internal comparisons.



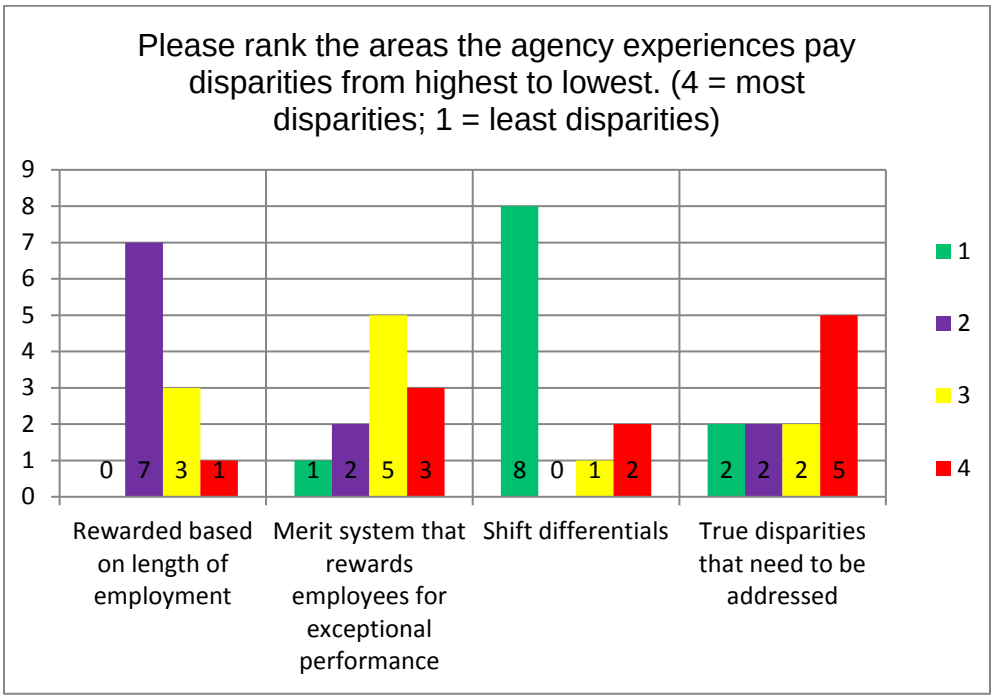

Similar to the hiring decisions results, the top areas of consideration when determining pay for promotional decisions are: experience and internal comparisons.




To ensure that agencies are maintaining pay equity most agencies review pay structures and conduct pay analyses. Additional comments noted that efforts have been made during the hiring and promotion processes to mitigate equity concerns, but comprehensive studies have not been done due to the costs associated with the obligation to correct any problems found.



When ranking four areas from the least to the most pay disparities experienced within an agency, the area of least concern is shift differentials. The area of most concern is true disparities that need to be addressed. This is one level of confirmation that disparities are occurring and need to be addressed in some manner.




The survey of participants in the NCASG regarding new hire pay practices exhibited that while most of the states do not forbid prior salary documentation as part of the hiring process, they do not require it either and about half of the respondents work in states with equal pay legislation or policy. Further, the NCASG survey reiterated our learnings from the South Carolina survey and exhibited that experience and recruitment difficulties play a large role in how starting pay is determined.

A group of six job classifications across various areas of state government were collected via our state systems of record. The data included classification, gender, ethnicity, salary, education, and years of service. Since the data included numerical and categorical variables, assistance from someone with

extensive statistical knowledge was needed to properly analyze the information. A consulting team[2] from the University of South Carolina, Department of Statistics, was gracious to assist. The relevant data for each classification is in Appendix III.

In the Administrative Assistant job classification, full factorial models and four-way interactions were examined, and any non-significant interactions were removed. The final model includes salary, ethnicity, education, gender, and years of service. The models conclude that ethnicity, education, and years of service each have a significant effect on salary. Once the specific variables with significance were determined, a deeper analysis of the estimated marginal means for each variable was completed. For ethnicity, the significance appears between black and white, but not between black and other or white and other ethnicities. There is no significance between technical school and college, but there are significant, justified salary differences between all other variables. Finally, there is a positive correlation between years of service and salary in this job classification.

In the Program Manager I classification, the same models were used as the Administrative Assistant classification and significance is noted in ethnicity. The four-way interactions were removed, and significance is noted in gender, ethnicity, education, and years of service. The estimated marginal means shows that male salaries are higher than female salaries. Significance is also noted between white and black employees, but none found between black and other or white and other ethnicities. In education, significance is noted between unknown and some college, unknown and post graduate, K-12 and post graduate, some college and unknown, some college and college/university, and some college and post graduate. Finally, there is a positive correlation between years of service and salary in this job classification.

[2]Consulting Team led by Wilma Sims at the University of South Carolina, Department of Statistics, LeConte College

Continuing with the same models for analysis, the Systems Programmer/Developer II classification shows us that there is no significance noted. Once the four-way interactions were removed, then significance is noted in years of service. Additionally, the parameter estimates were run and reveals that there is a significant positive correlation between years of service and salaries. For every year of additional service, the salary is expected to increase by $283.81.

For the Human Services Coordinator III classification the same models with all variables and the four-way interaction found significance in education. Once the four-way interactions were removed, no significance is noted. To dig deeper, the model was run without years of service as this variable appears to be the one variable that effects the significance of education. Finally, significance emerges between college/university and post graduate degrees.

In the Law Enforcement Officer I classification, the same models were used and significance is noted in ethnicity. The four-way interactions were removed, and significance is still only noted in ethnicity. The estimated marginal means shows that significance occurs between white and black and white and other ethnicities. No significance is noted between black and other ethnicities.

Finally, the Trades Specialist V classification models were run, and no significance is noted. Once the four-way interactions were removed, the model concluded that significance is noted in education between unknown and post graduate, K-12 and post graduate, some college and post graduate, and college and post graduate. There is also a significant positive correlation between years of service and salaries as noted in the parameter estimates. For every year of additional service, the salary is expected to increase by $234.02.

Interestingly, the original thought was that pay disparities exist and furthermore that gender and ethnicity play a large role in those disparities. After analyzing the six random classifications, the

data shows that gender and ethnicity have a significant effect on salary in only 50% of those classifications. In 83% of the classifications, significance is found in education and/or years of service.

South Carolina state government contains approximately 432 job classifications. A complete study would take more resources than those available for purposes of this project. This small subset of six classifications gives a glimpse of the situation and provides us with the analysis to make decisions moving forward. The data does not show overwhelming disparities yet work still needs to be done. A few adjustments could certainly drive positive change and improvements.

Additional research included the review of several informative articles, publications, and websites on this subject that aided in my learnings. The United States Department of Labor's [3] website contains a listing by state of all equal pay protections. Glassdoor published an extensive report April 2017 "How to Analyze Your Gender Pay Gap: An Employer's Guide" by Dr. Andrew Chamberlain.[4] HRDIVE published an excellent article "Landing the best candidates without asking for salary history" by Jennifer Maynard. [5] The Society for Human Resource Management has numerous articles and an entire toolkit dedicated to this topic. [6]

[3] https://www.dol.gov/wb/equalpay/equalpay_txt.htm

[4] https://www.glassdoor.com/research/app/uploads/sites/2/2017/04/GD_Report_AnalyzingGenderPayGap_Rebrand.pdf

[5] https://www.hrdive.com/news/landing-the-best-candidates-without-asking-for-salary-history/547010/

[6] https://www.shrm.org/resourcesandtools/tools-and-samples/toolkits/pages/managingpayequity.aspx

## Implementation Plan

Action Steps

1. Remove previous salary information from the South Carolina State Job Application. This "quick win" falls in line with industry standards and eliminates the temptation to only pay relative to prior salaries.

2. Reorganize the process that the Division of State Human Resources performs regarding employment verifications for state agencies. State HR Regulations require specific limits when making pay offers to employees moving from one state agency to another. Small changes in this process will accomplish all requirements, yet once again eliminate the temptation to only pay relative to prior salaries.

3. Create a template for agencies to use when evaluating candidates and making hiring or promotional pay decisions. Documentation of true analysis will provide defensible justification if pay decisions are ever questioned.

Timeframes and Cost

The time spent on editing the State Job Application would be minimal since these are electronically stored. No cost would be incurred in printing new applications. The time spent on educating agencies on the new process for verifications and how to use the template would be negligible. The only expenditure of funds needed would be to purchase the software SPSS. This

software is necessary for future evaluations of this type of data. For purposes of this project, a 15-day free trial version was utilized.

## Potential Obstacles and Methods to Overcome Them

Approval from agency leadership is necessary before changes to the application are implemented. Approval from division leadership is necessary before changes in the employment verification process are implemented. Approval from the agency communication team is necessary before publishing a template for agencies. These suggested changes will be submitted to the HR Advisory Council, a group of HR leaders from various state agencies, to ensure communication and delivery is successful.

## Potential Resources

Members of the Division of State Human Resources, the HR Advisory Council, the agency communication team, and agency leadership are all valuable resources which will be utilized in this process. NeoGov, the state system for recruiting, will be utilized when making the necessary changes to the state job application. A simple Excel spreadsheet will be utilized when creating the comparator template for agencies. Finally, the investment in the SPSS software necessary to appropriately analyze this type of data in the future would be the only financial expenditure for resources needed.

Communication with Key Stakeholders

Once the appropriate levels of approval are achieved, communication to agencies' human resources staff will be crucial. The initial communication could be achieved via e-mail with subsequent follow-up in our next HR Advisory Meeting. DSHR staff would also be available for any additional questions or consultation moving forward.

Integration into Standard Operating Procedure

After the initial roll-out of these improvements, continuous training and communication is necessary as new HR staff is hired within agencies as well as within DSHR. Documentation of these changes will be added to the New HR Director Orientation program already in place within DSHR.

## Evaluation Method

After the recommendations for the project are implemented, evaluations are necessary to track the effectiveness of them. First, an annual review of the six job classifications to note any improvements or changes to the variables of significance. Next, a brief survey to the human resources community to receive feedback on the new employment verification process. Finally, a brief survey to the human resources community to determine if the comparator template or something similar is being used within their agencies to make defensible hiring and promotional pay decisions.

## Summary and Recommendations

Making justifiable hiring and promotional pay decisions is critical for employers. This brief analysis shows us that there is room for improvement in state government processes. Every effort should be made to make these decisions without prejudice or favoritism. Based on the information gathered, education and continued evaluation of these recommended items should drive improvements within state agencies.

# Appendices

## Appendix I – Survey of Human Resources Leaders in South Carolina

1. Which of these does the agency consider when determining pay when making hiring decisions?
   (Select all that apply.)

   a. Experience
   b. Minimum Training and Experience
   c. Recruitment Issues/Difficulties
   d. Internal Comparisons
   e. Minimum of Range
   f. Other – please describe.

2. Which of these does the agency consider when determining pay when making promotional decisions? (Select all that apply.)

   a. Experience
   b. Minimum Training and Experience
   c. Recruitment Issues/Difficulties
   d. Internal Comparisons
   e. Minimum of Range
   f. Other – please describe.

3. How does the agency ensure it is maintaining pay equity? (Select all that apply.)

   a. Ensure confidentiality of agency-evaluation (attorney-client privilege)
   b. Review pay structures
   c. Review starting pay policies
   d. Review merit pay increase policies
   e. Review promotional pay policies
   f. Conduct pay analyses
   g. Other – please describe.

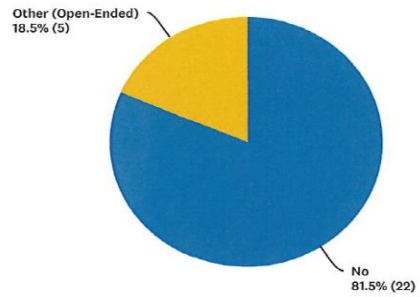
4. Please rank the areas the agency experiences pay disparities from highest to lowest.

   a. Rewarded based on length of employment
   b. Merit system that rewards employees for exceptional performance
   c. Shift differentials
   d. True disparities that need to be addressed

## Appendix II – Pertinent Survey Results of Other States Via NCASG

### Prior Salary Documentation REQUIRED

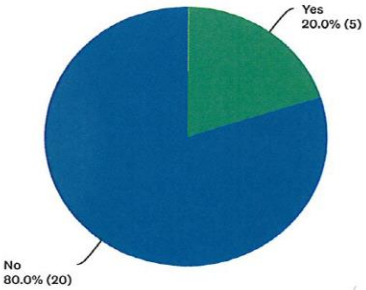
Answered: 27 Skipped: 0




| ANSWER CHOICES | | RESPONSES | |
|---|---|---|---|
| Yes | | 0.0% | 0 |
| No | | 81.5% | 22 |
| Other (Open-Ended) | Responses | 18.5% | 5 |
| TOTAL | | | 27 |

### Prior Salary Documentation FORBIDDEN

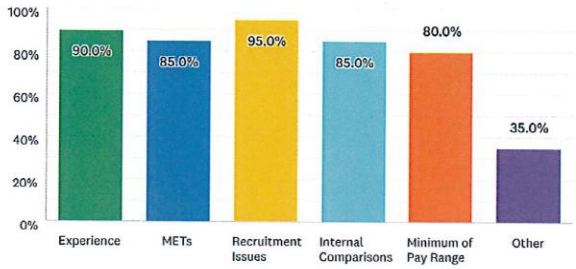
Answered: 25 Skipped: 2




| ANSWER CHOICES | RESPONSES | |
|---|---|---|
| Yes | 20.0% | 5 |
| No | 80.0% | 20 |
| TOTAL | | 25 |

## Method of Determining Starting Pay (Respondents allow prior salary documentation)

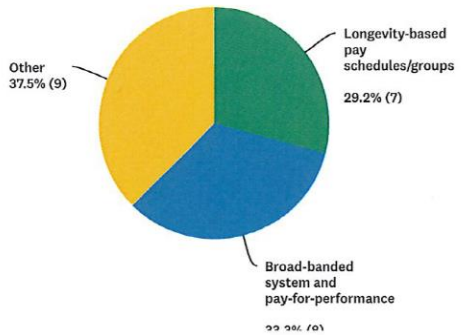
Answered: 20 Skipped: 7




| ANSWER CHOICES | | RESPONSES | |
|---|---|---|---|
| Experience | | 90.0% | 18 |
| METs | | 85.0% | 17 |
| Recruitment Issues | | 95.0% | 19 |
| Internal Comparisons | | 85.0% | 17 |
| Minimum of Pay Range | | 80.0% | 16 |
| Other | Responses | 35.0% | 7 |
| Total Respondents: 20 | | | |

## Pay Structure

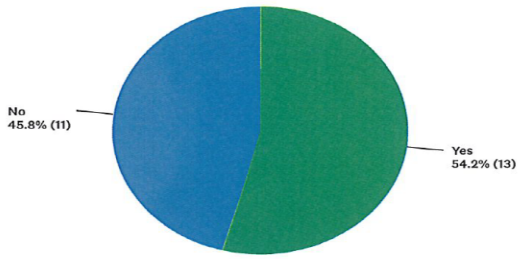
Answered: 24 Skipped: 3




| ANSWER CHOICES | | RESPONSES | |
|---|---|---|---|
| Longevity-based pay schedules/groups | | 29.2% | 7 |
| Broad-banded system and pay-for-performance | | 33.3% | 8 |
| Other | Responses | 37.5% | 9 |
| TOTAL | | | 24 |

## Equal Pay Legislation or Policy

Answered: 24 Skipped: 3




| ANSWER CHOICES | RESPONSES | |
|---|---|---|
| Yes | 54.2% | 13 |
| No | 45.8% | 11 |
| TOTAL | | 24 |

## Appendix III – Data Analysis of Six State Job Classifications

Coding

# Frequencies

## Frequency Table

### Ethnic Origin

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 10/Not assigned | 2 | .1 | .1 | .1 |
| | American Indian/Alaska Native | 12 | .5 | .5 | .6 |
| | Asian | 14 | .6 | .6 | 1.2 |
| | Black/African American | 828 | 36.9 | 36.9 | 38.2 |
| | Hispanic/Latino | 33 | 1.5 | 1.5 | 39.7 |
| | Native Hawaiian/Other Pacfic Islander | 1 | .0 | .0 | 39.7 |
| | Two or More Races | 15 | .7 | .7 | 40.4 |
| | White | 1336 | 59.6 | 59.6 | 100.0 |
| | Total | 2241 | 100.0 | 100.0 | |

### Highest education

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 7 | 1 | .0 | .0 | .0 |
| | College/University | 522 | 23.3 | 23.3 | 23.3 |
| | Completed 1 Year of College | 44 | 2.0 | 2.0 | 25.3 |
| | Completed 2 Years of College | 56 | 2.5 | 2.5 | 27.8 |
| | Completed 3 Years of College | 16 | .7 | .7 | 28.5 |
| | Completed Grade 11 | 2 | .1 | .1 | 28.6 |
| | K-12 School | 820 | 36.6 | 36.6 | 65.2 |
| | Master's Degree | 47 | 2.1 | 2.1 | 67.3 |
| | Not assigned | 129 | 5.8 | 5.8 | 73.0 |
| | Tech School/College | 604 | 27.0 | 27.0 | 100.0 |
| | Total | 2241 | 100.0 | 100.0 | |

1 - 130
2 - 822
3 - 720
4 - 522
5 - 47

Administrative Assistant

```
UNIANOVA AnnualSalary BY Ethnicity Education Gender WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(Ethnicity) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(Education) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Ethnicity Education Gender AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Ethnicity | 1.00 | White | 1336 |
| | 2.00 | Black | 828 |
| | 3.00 | Other | 77 |
| Education | 1.00 | Unknown | 130 |
| | 2.00 | K-12 | 822 |
| | 3.00 | Come College/Tech | 720 |
| | 4.00 | College/University | 522 |
| | 5.00 | Post Graduate | 47 |
| Gender | Female | | 2108 |
| | Male | | 133 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 9227864521[a] | 8 | 1153483065 | 53.868 | .000 |
| Intercept | 2.530E+11 | 1 | 2.530E+11 | 11813.804 | .000 |
| Ethnicity | 823187131.4 | 2 | 411593565.7 | 19.222 | .000 |
| Education | 826892826.9 | 4 | 206723206.7 | 9.654 | .000 |
| Gender | 24087433.50 | 1 | 24087433.50 | 1.125 | .289 |
| AvgYrsinStateSvc | 7153980159 | 1 | 7153980159 | 334.094 | .000 |
| Error | 4.779E+10 | 2232 | 21413092.91 | | |
| Total | 2.628E+12 | 2241 | | | |
| Corrected Total | 5.702E+10 | 2240 | | | |

a. R Squared = .162 (Adjusted R Squared = .159)

## Estimated Marginal Means

## 1. Ethnicity

### Estimates

Dependent Variable: Annual Salary

| Ethnicity | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| White | 34496.216[a] | 259.063 | 33988.185 | 35004.246 |
| Black | 33225.613[a] | 279.051 | 32678.386 | 33772.839 |
| Other | 33823.562[a] | 571.202 | 32703.418 | 34943.706 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 10.417714644461654.

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Ethnicity | (J) Ethnicity | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| White | Black | 1270.603* | 205.283 | .000 | 868.038 | 1673.168 |
| | Other | 672.654 | 545.250 | .217 | -396.597 | 1741.904 |
| Black | White | -1270.603* | 205.283 | .000 | -1673.168 | -868.038 |
| | Other | -597.949 | 554.866 | .281 | -1686.057 | 490.158 |
| Other | White | -672.654 | 545.250 | .217 | -1741.904 | 396.597 |
| | Black | 597.949 | 554.866 | .281 | -490.158 | 1686.057 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 823187131.4 | 2 | 411593565.7 | 19.222 | .000 |
| Error | 4.779E+10 | 2232 | 21413092.91 | | |

The F tests the effect of Ethnicity. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

## 2. Education

## Estimates

Dependent Variable: Annual Salary

| Education | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| Unknown | 32502.275[a] | 471.007 | 31578.619 | 33425.932 |
| K-12 | 33005.651[a] | 295.538 | 32426.093 | 33585.208 |
| Come College/Tech | 33720.163[a] | 302.588 | 33126.781 | 34313.546 |
| College/University | 34109.016[a] | 312.607 | 33495.986 | 34722.047 |
| Post Graduate | 35905.212[a] | 712.217 | 34508.535 | 37301.889 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 10.417714644461654.

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence [b]... |
|---|---|---|---|---|---|
| | | | | | Lower Bound |
| Unknown | K-12 | -503.375 | 443.532 | .257 | -1373.155 |
| | Come College/Tech | -1217.888* | 450.647 | .007 | -2101.619 |
| | College/University | -1606.741* | 455.823 | .000 | -2500.622 |
| | Post Graduate | -3402.937* | 788.847 | .000 | -4949.887 |
| K-12 | Unknown | 503.375 | 443.532 | .257 | -366.404 |
| | Come College/Tech | -714.512* | 236.904 | .003 | -1179.087 |
| | College/University | -1103.365* | 262.025 | .000 | -1617.204 |
| | Post Graduate | -2899.561* | 695.767 | .000 | -4263.979 |
| Come College/Tech | Unknown | 1217.888* | 450.647 | .007 | 334.156 |
| | K-12 | 714.512* | 236.904 | .003 | 249.938 |
| | College/University | -388.853 | 271.202 | .152 | -920.687 |
| | Post Graduate | -2185.049* | 699.749 | .002 | -3557.276 |
| College/University | Unknown | 1606.741* | 455.823 | .000 | 712.860 |
| | K-12 | 1103.365* | 262.025 | .000 | 589.527 |
| | Come College/Tech | 388.853 | 271.202 | .152 | -142.981 |
| | Post Graduate | -1796.196* | 705.455 | .011 | -3179.613 |
| Post Graduate | Unknown | 3402.937* | 788.847 | .000 | 1855.986 |
| | K-12 | 2899.561* | 695.767 | .000 | 1535.144 |

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | 95% Confidence Interval for [b]... Upper Bound |
|---|---|---|
| Unknown | K-12 | 366.404 |
| | Come College/Tech | -334.156 |
| | College/University | -712.860 |
| | Post Graduate | -1855.986 |
| K-12 | Unknown | 1373.155 |
| | Come College/Tech | -249.938 |
| | College/University | -589.527 |
| | Post Graduate | -1535.144 |
| Come College/Tech | Unknown | 2101.619 |
| | K-12 | 1179.087 |
| | College/University | 142.981 |
| | Post Graduate | -812.822 |
| College/University | Unknown | 2500.622 |
| | K-12 | 1617.204 |
| | Come College/Tech | 920.687 |
| | Post Graduate | -412.778 |
| Post Graduate | Unknown | 4949.887 |
| | K-12 | 4263.979 |

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence [b]... Lower Bound |
|---|---|---|---|---|---|
| | Come College/Tech | 2185.049* | 699.749 | .002 | 812.822 |
| | College/University | 1796.196* | 705.455 | .011 | 412.778 |

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | 95% Confidence Interval for [b]... Upper Bound |
|---|---|---|
| | Come College/Tech | 3557.276 |
| | College/University | 3179.613 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 826892826.9 | 4 | 206723206.7 | 9.654 | .000 |
| Error | 4.779E+10 | 2232 | 21413092.91 | | |

The F tests the effect of Education. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

```
CORRELATIONS
  /VARIABLES=AvgYrsinStateSvc AnnualSalary
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

## Correlations

### Correlations

| | | Avg Yrs in State Svc | Annual Salary |
|---|---|---|---|
| Avg Yrs in State Svc | Pearson Correlation | 1 | .365** |
| | Sig. (2-tailed) | | .000 |
| | N | 2241 | 2241 |
| Annual Salary | Pearson Correlation | .365** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 2241 | 2241 |

**. Correlation is significant at the 0.01 level (2-tailed).

Human Services Coord.

```
UNIANOVA AnnualSalary BY Gender Ethnicity Education WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Gender Ethnicity Education AvgYrsinStateSvc.
```

## Univariate Analysis of Variance - Without 4-Way Interaction

### Between-Subjects Factors

| | | N |
|---|---|---|
| Gender | Female | 26 |
| | Male | 8 |
| Ethnicity | 1.00 | 20 |
| | 2.00 | 13 |
| | 3.00 | 1 |
| Education | 1.00 | 2 |
| | 2.00 | 4 |
| | 4.00 | 18 |
| | 5.00 | 10 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 978983680[a] | 7 | 139854811.5 | 1.990 | .095 |
| Intercept | 2.004E+10 | 1 | 2.004E+10 | 285.187 | .000 |
| Gender | 60996047.26 | 1 | 60996047.26 | .868 | .360 |
| Ethnicity | 79198531.77 | 2 | 39599265.89 | .564 | .576 |
| Education | 514949582.2 | 3 | 171649860.7 | 2.443 | .087 |
| AvgYrsinStateSvc | 12578683.31 | 1 | 12578683.31 | .179 | .676 |
| Error | 1826933780 | 26 | 70266683.83 | | |
| Total | 1.522E+11 | 34 | | | |
| Corrected Total | 2805917460 | 33 | | | |

a. R Squared = .349 (Adjusted R Squared = .174)

```
UNIANOVA AnnualSalary BY Gender Ethnicity Education
```

```
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/EMMEANS=TABLES(Education) COMPARE ADJ(LSD)
/CRITERIA=ALPHA(0.05)
/DESIGN=Gender Ethnicity Education.
```

## Univariate Analysis of Variance - With Years of Service Removed

### Between-Subjects Factors

| | | N |
|---|---|---|
| Gender | Female | 26 |
| | Male | 8 |
| Ethnicity | 1.00 | 20 |
| | 2.00 | 13 |
| | 3.00 | 1 |
| Education | 1.00 | 2 |
| | 2.00 | 4 |
| | 4.00 | 18 |
| | 5.00 | 10 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 966404997[a] | 6 | 161067499.5 | 2.364 | .058 |
| Intercept | 2.384E+10 | 1 | 2.384E+10 | 349.966 | .000 |
| Gender | 109007175.2 | 1 | 109007175.2 | 1.600 | .217 |
| Ethnicity | 69556864.52 | 2 | 34778432.26 | .510 | .606 |
| Education | 608419777.5 | 3 | 202806592.5 | 2.977 | .049 |
| Error | 1839512463 | 27 | 68130091.22 | | |
| Total | 1.522E+11 | 34 | | | |
| Corrected Total | 2805917460 | 33 | | | |

a. R Squared = .344 (Adjusted R Squared = .199)

## Estimated Marginal Means

## Education

### Estimates

Dependent Variable: Annual Salary

| Education | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| 1.00 | 74941.492 | 6950.875 | 60679.475 | 89203.510 |
| 2.00 | 66630.795 | 5141.996 | 56080.291 | 77181.298 |
| 4.00 | 72877.093 | 3218.405 | 66273.473 | 79480.714 |
| 5.00 | 63478.298 | 4489.306 | 54267.003 | 72689.593 |

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1.00 | 2.00 | 8310.698 | 7389.583 | .271 | -6851.475 | 23472.870 |
| Unknown | 4.00 | 2064.399 | 6358.067 | .748 | -10981.277 | 15110.075 |
| | 5.00 | 11463.194 | 6471.422 | .088 | -1815.066 | 24741.454 |
| 2.00 | 1.00 | -8310.698 | 7389.583 | .271 | -23472.870 | 6851.475 |
| K-12 | 4.00 | -6246.299 | 4711.287 | .196 | -15913.062 | 3420.465 |
| | 5.00 | 3152.496 | 5351.319 | .561 | -7827.504 | 14132.497 |
| 4.00 | 1.00 | -2064.399 | 6358.067 | .748 | -15110.075 | 10981.277 |
| College/ University | 2.00 | 6246.299 | 4711.287 | .196 | -3420.465 | 15913.062 |
| | 5.00 | 9398.795* | 3550.494 | .013 | 2113.782 | 16683.808 |
| 5.00 | 1.00 | -11463.194 | 6471.422 | .088 | -24741.454 | 1815.066 |
| Post Graduate | 2.00 | -3152.496 | 5351.319 | .561 | -14132.497 | 7827.504 |
| | 4.00 | -9398.795* | 3550.494 | .013 | -16683.808 | -2113.782 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 608419777.5 | 3 | 202806592.5 | 2.977 | .049 |
| Error | 1839512463 | 27 | 68130091.22 | | |

The F tests the effect of Education. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

```
UNIANOVA AnnualSalary BY Gender Ethnicity Education WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(Education) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Gender Ethnicity Education AvgYrsinStateSvc.
```

## Univariate Analysis of Variance - With Years of Service

### Between-Subjects Factors

| | | N |
|---|---|---|
| Gender | Female | 26 |
| | Male | 8 |
| Ethnicity | 1.00 | 20 |
| | 2.00 | 13 |
| | 3.00 | 1 |
| Education | 1.00 | 2 |
| | 2.00 | 4 |
| | 4.00 | 18 |
| | 5.00 | 10 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 978983680[a] | 7 | 139854811.5 | 1.990 | .095 |
| Intercept | 2.004E+10 | 1 | 2.004E+10 | 285.187 | .000 |
| Gender | 60996047.26 | 1 | 60996047.26 | .868 | .360 |
| Ethnicity | 79198531.77 | 2 | 39599265.89 | .564 | .576 |
| Education | 514949582.2 | 3 | 171649860.7 | 2.443 | .087 |
| AvgYrsinStateSvc | 12578683.31 | 1 | 12578683.31 | .179 | .676 |
| Error | 1826933780 | 26 | 70266683.83 | | |
| Total | 1.522E+11 | 34 | | | |
| Corrected Total | 2805917460 | 33 | | | |

a. R Squared = .349 (Adjusted R Squared = .174)

## Estimated Marginal Means

## Education

### Estimates

Dependent Variable: Annual Salary

| Education | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| 1.00 | 75959.632[a] | 7457.915 | 60629.667 | 91289.596 |
| 2.00 | 67089.918[a] | 5333.556 | 56126.635 | 78053.200 |
| 4.00 | 72671.081[a] | 3304.550 | 65878.482 | 79463.680 |
| 5.00 | 63948.280[a] | 4692.525 | 54302.657 | 73593.903 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 12.437607848546568.

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1.00 | 2.00 | 8869.714 | 7619.979 | .255 | -6793.378 | 24532.806 |
| | 4.00 | 3288.551 | 7075.585 | .646 | -11255.523 | 17832.624 |
| | 5.00 | 12011.352 | 6698.595 | .085 | -1757.806 | 25780.510 |
| 2.00 | 1.00 | -8869.714 | 7619.979 | .255 | -24532.806 | 6793.378 |
| | 4.00 | -5581.164 | 5036.235 | .278 | -15933.293 | 4770.966 |
| | 5.00 | 3141.638 | 5434.642 | .568 | -8029.429 | 14312.705 |
| 4.00 | 1.00 | -3288.551 | 7075.585 | .646 | -17832.624 | 11255.523 |
| | 2.00 | 5581.164 | 5036.235 | .278 | -4770.966 | 15933.293 |
| | 5.00 | 8722.801* | 3943.861 | .036 | 616.079 | 16829.524 |
| 5.00 | 1.00 | -12011.352 | 6698.595 | .085 | -25780.510 | 1757.806 |
| | 2.00 | -3141.638 | 5434.642 | .568 | -14312.705 | 8029.429 |
| | 4.00 | -8722.801* | 3943.861 | .036 | -16829.524 | -616.079 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

## Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 514949582.2 | 3 | 171649860.7 | 2.443 | .087 |
| Error | 1826933780 | 26 | 70266683.83 | | |

The F tests the effect of Education. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

```
NEW FILE.
DATASET NAME DataSet1 WINDOW=FRONT.

GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\poole\Desktop\CPM\Copy of CPM IT Classification.xlsx'
  /SHEET=name 'DATA'
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet2 WINDOW=FRONT.
* Encoding: UTF-8.
* Encoding: UTF-8.


RECODE EthnicOrigin ('10/Not assigned'=3) ('American Indian/Alaska Native'=3)
('Asian'=3)
    ('Black/African American'=2) ('Hispanic/Latino'=3) ('Native Hawaiian/Other
 Pacfic Islander'=3)
    ('Two or More Races'=3) ('White'=1) INTO Ethnicity.

>Warning # 4624 in column 98.  Text: )
>The preceding RECODE specifies a value to be recoded that is longer than some
>variable(s) in the recode.  The shorter values will be padded with blanks for
>the comparison.
EXECUTE.

RECODE Highesteducation ('7'=1) ('4'=1) ('College/University'=4) ('Completed 1
 Year of College'=3)
    ('Completed 2 Years of College'=3) ('Completed 3 Years of College'=3) ('Co
mpleted Grade 11'=2)
    ('K-12 School'=2) ("Master's Degree"=5) ("Doctorate"=5) ("Juris Doctorate"
=5) ("Master's"=5) ('Not assigned'=1) ('Tech School/College'=3) INTO Education
.
EXECUTE.
FREQUENCIES VARIABLES=Ethnicity Education
  /ORDER=ANALYSIS.
```

## Frequencies

[DataSet2]

**Statistics**

| | | Ethnicity | Education |
|---|---|---|---|
| N | Valid | 132 | 132 |
| | Missing | 0 | 0 |

## Frequency Table

**Ethnicity**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 92 | 69.7 | 69.7 | 69.7 |
| | 2.00 | 25 | 18.9 | 18.9 | 88.6 |
| | 3.00 | 15 | 11.4 | 11.4 | 100.0 |
| | Total | 132 | 100.0 | 100.0 | |

**Education**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 8 | 6.1 | 6.1 | 6.1 |
| | 2.00 | 11 | 8.3 | 8.3 | 14.4 |
| | 3.00 | 37 | 28.0 | 28.0 | 42.4 |
| | 4.00 | 71 | 53.8 | 53.8 | 96.2 |
| | 5.00 | 5 | 3.8 | 3.8 | 100.0 |
| | Total | 132 | 100.0 | 100.0 | |

```
GET
  FILE='C:\Users\poole\Desktop\CPM\Program Manager.sav'.
DATASET NAME DataSet3 WINDOW=FRONT.
DATASET ACTIVATE DataSet2.

SAVE OUTFILE='C:\Users\poole\Desktop\CPM\IT.sav'
  /COMPRESSED.
DATASET CLOSE DataSet3.
DATASET CLOSE DataSet1.
UNIANOVA AnnualSalary BY Ethnicity Education Gender WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
```

```
  /DESIGN=Ethnicity Education Gender AvgYrsinStateSvc AvgYrsinStateSvc*Educati
on*Ethnicity*Gender.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Ethnicity | 1.00 | White | 92 |
| | 2.00 | Black | 25 |
| | 3.00 | Other | 15 |
| Education | 1.00 | Unknown | 8 |
| | 2.00 | K-12 | 11 |
| | 3.00 | Come College/Tech | 37 |
| | 4.00 | College/University | 71 |
| | 5.00 | Post Graduate | 5 |
| Gender | Female | | 42 |
| | Male | | 90 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 2468999078[a] | 29 | 85137899.25 | 1.505 | .070 |
| Intercept | 5035348828 | 1 | 5035348828 | 89.000 | .000 |
| Ethnicity | 160247932.2 | 2 | 80123966.08 | 1.416 | .247 |
| Education | 115415968.4 | 4 | 28853992.11 | .510 | .728 |
| Gender | 7258268.560 | 1 | 7258268.560 | .128 | .721 |
| AvgYrsinStateSvc | 63124920.85 | 1 | 63124920.85 | 1.116 | .293 |
| Ethnicity * Education * Gender * AvgYrsinStateSvc | 1183200869 | 21 | 56342898.54 | .996 | .475 |
| Error | 5770860197 | 102 | 56577060.76 | | |
| Total | 4.050E+11 | 132 | | | |
| Corrected Total | 8239859275 | 131 | | | |

a. R Squared = .300 (Adjusted R Squared = .101)

```
UNIANOVA AnnualSalary BY Ethnicity Education Gender WITH AvgYrsinStateSvc
```

```
/METHOD=SSTYPE(3)
/INTERCEPT=INCLUDE
/CRITERIA=ALPHA(0.05)
/DESIGN=Ethnicity Education Gender AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Ethnicity | 1.00 | White | 92 |
| | 2.00 | Black | 25 |
| | 3.00 | Other | 15 |
| Education | 1.00 | Unknown | 8 |
| | 2.00 | K-12 | 11 |
| | 3.00 | Come College/Tech | 37 |
| | 4.00 | College/University | 71 |
| | 5.00 | Post Graduate | 5 |
| Gender | Female | | 42 |
| | Male | | 90 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 1285798209[a] | 8 | 160724776.1 | 2.843 | .006 |
| Intercept | 7.211E+10 | 1 | 7.211E+10 | 1275.409 | .000 |
| Ethnicity | 118798697.1 | 2 | 59399348.54 | 1.051 | .353 |
| Education | 283918549.8 | 4 | 70979637.45 | 1.255 | .291 |
| Gender | 6857.698 | 1 | 6857.698 | .000 | .991 |
| AvgYrsinStateSvc | 897003098.6 | 1 | 897003098.6 | 15.866 | .000 |
| Error | 6954061066 | 123 | 56537081.84 | | |
| Total | 4.050E+11 | 132 | | | |
| Corrected Total | 8239859275 | 131 | | | |

a. R Squared = .156 (Adjusted R Squared = .101)

```
CORRELATIONS
```

```
/VARIABLES=AnnualSalary AvgYrsinStateSvc
/PRINT=TWOTAIL NOSIG
/MISSING=PAIRWISE.
```

## Correlations

**Correlations**

| | | Annual Salary | Avg Yrs in State Svc |
|---|---|---|---|
| Annual Salary | Pearson Correlation | 1 | .327** |
| | Sig. (2-tailed) | | .000 |
| | N | 132 | 132 |
| Avg Yrs in State Svc | Pearson Correlation | .327** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 132 | 132 |

**. Correlation is significant at the 0.01 level (2-tailed).

```
GET
  FILE='C:\Users\poole\Desktop\CPM\IT.sav'.
DATASET NAME DataSet1 WINDOW=FRONT.
UNIANOVA AnnualSalary BY Education Ethnicity Gender WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT PARAMETER
  /CRITERIA=ALPHA(.05)
  /DESIGN=Education Ethnicity Gender AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

```
[DataSet1] C:\Users\poole\Desktop\CPM\IT.sav
```

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Education | 1.00 | Unknown | 8 |
| | 2.00 | K-12 | 11 |
| | 3.00 | Come College/Tech | 37 |
| | 4.00 | College/University | 71 |
| | 5.00 | Post Graduate | 5 |
| Ethnicity | 1.00 | White | 92 |
| | 2.00 | Black | 25 |
| | 3.00 | Other | 15 |
| Gender | Female | | 42 |
| | Male | | 90 |

## Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 1285798209[a] | 8 | 160724776.1 | 2.843 | .006 |
| Intercept | 7.211E+10 | 1 | 7.211E+10 | 1275.409 | .000 |
| Education | 283918549.8 | 4 | 70979637.45 | 1.255 | .291 |
| Ethnicity | 118798697.1 | 2 | 59399348.54 | 1.051 | .353 |
| Gender | 6857.698 | 1 | 6857.698 | .000 | .991 |
| AvgYrsinStateSvc | 897003098.6 | 1 | 897003098.6 | 15.866 | .000 |
| Error | 6954061066 | 123 | 56537081.84 | | |
| Total | 4.050E+11 | 132 | | | |
| Corrected Total | 8239859275 | 131 | | | |

a. R Squared = .156 (Adjusted R Squared = .101)

## Parameter Estimates

Dependent Variable: Annual Salary

| Parameter | B | Std. Error | t | Sig. | 95% Confidence Interval | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Intercept | 49227.611 | 3952.029 | 12.456 | .000 | 41404.811 | 57050.411 |
| [Education=1.00] | -172.019 | 4374.655 | -.039 | .969 | -8831.380 | 8487.341 |
| [Education=2.00] | 2954.561 | 4145.765 | .713 | .477 | -5251.727 | 11160.849 |
| [Education=3.00] | -131.835 | 3607.986 | -.037 | .971 | -7273.622 | 7009.953 |
| [Education=4.00] | 3017.942 | 3543.425 | .852 | .396 | -3996.050 | 10031.934 |
| [Education=5.00] | 0[a] | . | . | . | . | . |
| [Ethnicity=1.00] | 1102.751 | 2200.686 | .501 | .617 | -3253.373 | 5458.874 |
| [Ethnicity=2.00] | -1372.516 | 2527.443 | -.543 | .588 | -6375.436 | 3630.403 |
| [Ethnicity=3.00] | 0[a] | . | . | . | . | . |
| [Gender=Female] | 16.194 | 1470.371 | .011 | .991 | -2894.316 | 2926.704 |
| [Gender=Male] | 0[a] | . | . | . | . | . |
| AvgYrsinStateSvc | 283.813 | 71.253 | 3.983 | .000 | 142.773 | 424.854 |

a. This parameter is set to zero because it is redundant.

[DataSet1] C:\Users\poole\Desktop\CPM\Law Enforcement 021419.sav

## Univariate Analysis of Variance

```
* Encoding: UTF-8.


RECODE EthnicOrigin ('10/Not assigned'=3) ('American Indian/Alaska Native'=3)
('Asian'=3)
    ('Black/African American'=2) ('Hispanic/Latino'=3) ('Native Hawaiian/Other
 Pacfic Islander'=3)
    ('Two or More Races'=3) ('White'=1) INTO Ethnicity.
EXECUTE.

RECODE Highesteducation ('7'=1) ('4'=1) ('College/University'=4) ('Completed 1
 Year of College'=3)
    ('Completed 2 Years of College'=3) ('Completed 3 Years of College'=3) ('Co
mpleted Grade 11'=2)
    ('K-12 School'=2) ("Master's Degree"=5) ("Doctorate"=5) ("Juris Doctorate"
=5) ("Master's"=5) ('Not assigned'=1) ('Tech School/College'=3) INTO Education
.
EXECUTE.
UNIANOVA AnnualSalary BY Gender Ethnicity Education WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Gender Ethnicity Education AvgYrsinStateSvc AvgYrsinStateSvc*Educati
on*Ethnicity*Gender.
```

## Univariate Analysis of Variance

## Between-Subjects Factors

| | | N |
|---|---|---|
| Gender | Female | 68 |
| | Male | 458 |
| | unknown | 1 |
| Ethnicity | 1.00 | 328 |
| | 2.00 | 133 |
| | 3.00 | 66 |
| Education | 1.00 | 12 |
| | 2.00 | 237 |
| | 3.00 | 113 |
| | 4.00 | 153 |
| | 5.00 | 12 |

## Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 1.705E+10[a] | 31 | 550096232.6 | .489 | .991 |
| Intercept | 9388929814 | 1 | 9388929814 | 8.349 | .004 |
| Gender | 1407478079 | 2 | 703739039.3 | .626 | .535 |
| Ethnicity | 1.007E+10 | 2 | 5034468832 | 4.477 | .012 |
| Education | 1177488488 | 4 | 294372121.9 | .262 | .902 |
| AvgYrsinStateSvc | 4166593.294 | 1 | 4166593.294 | .004 | .951 |
| Gender * Ethnicity * Education * AvgYrsinStateSvc | 2387255087 | 22 | 108511594.8 | .096 | 1.000 |
| Error | 5.566E+11 | 495 | 1124491004 | | |
| Total | 1.707E+12 | 527 | | | |
| Corrected Total | 5.737E+11 | 526 | | | |

a. R Squared = .030 (Adjusted R Squared = -.031)

```
UNIANOVA AnnualSalary BY Gender Ethnicity Education WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Gender Ethnicity Education AvgYrsinStateSvc.
```

# Univariate Analysis of Variance

## Between-Subjects Factors

| | | N |
|---|---|---|
| Gender | Female | 68 |
| | Male | 458 |
| | unknown | 1 |
| Ethnicity | 1.00 | 328 |
| | 2.00 | 133 |
| | 3.00 | 66 |
| Education | 1.00 | 12 |
| | 2.00 | 237 |
| | 3.00 | 113 |
| | 4.00 | 153 |
| | 5.00 | 12 |

## Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 1.467E+10[a] | 9 | 1629525347 | 1.507 | .142 |
| Intercept | 1.131E+10 | 1 | 1.131E+10 | 10.460 | .001 |
| Gender | 2610946812 | 2 | 1305473406 | 1.207 | .300 |
| Ethnicity | 9261851496 | 2 | 4630925748 | 4.283 | .014 |
| Education | 1325244340 | 4 | 331311084.9 | .306 | .874 |
| AvgYrsinStateSvc | 1642522477 | 1 | 1642522477 | 1.519 | .218 |
| Error | 5.590E+11 | 517 | 1081257838 | | |
| Total | 1.707E+12 | 527 | | | |
| Corrected Total | 5.737E+11 | 526 | | | |

a. R Squared = .026 (Adjusted R Squared = .009)

```
UNIANOVA AnnualSalary BY Gender Ethnicity Education WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(Ethnicity) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Gender Ethnicity Education AvgYrsinStateSvc.
```

# Univariate Analysis of Variance

### Between-Subjects Factors

| | | N |
|---|---|---|
| Gender | Female | 68 |
| | Male | 458 |
| | unknown | 1 |
| Ethnicity | 1.00 | 328 |
| | 2.00 | 133 |
| | 3.00 | 66 |
| Education | 1.00 | 12 |
| | 2.00 | 237 |
| | 3.00 | 113 |
| | 4.00 | 153 |
| | 5.00 | 12 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 1.467E+10[a] | 9 | 1629525347 | 1.507 | .142 |
| Intercept | 1.131E+10 | 1 | 1.131E+10 | 10.460 | .001 |
| Gender | 2610946812 | 2 | 1305473406 | 1.207 | .300 |
| Ethnicity | 9261851496 | 2 | 4630925748 | 4.283 | .014 |
| Education | 1325244340 | 4 | 331311084.9 | .306 | .874 |
| AvgYrsinStateSvc | 1642522477 | 1 | 1642522477 | 1.519 | .218 |
| Error | 5.590E+11 | 517 | 1081257838 | | |
| Total | 1.707E+12 | 527 | | | |
| Corrected Total | 5.737E+11 | 526 | | | |

a. R Squared = .026 (Adjusted R Squared = .009)

# Estimated Marginal Means

## Ethnicity

## Estimates

Dependent Variable: Annual Salary

| Ethnicity | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| 1.00 | 41890.299[a] | 11385.650 | 19522.470 | 64258.127 |
| 2.00 | 33594.532[a] | 11697.638 | 10613.785 | 56575.280 |
| 3.00 | 32114.799[a] | 12173.761 | 8198.678 | 56030.921 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 3.564444648672955.

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Ethnicity | (J) Ethnicity | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1.00 | 2.00 | 8295.766* | 3471.132 | .017 | 1476.508 | 15115.025 |
| | 3.00 | 9775.499* | 4520.332 | .031 | 895.022 | 18655.976 |
| 2.00 | 1.00 | -8295.766* | 3471.132 | .017 | -15115.025 | -1476.508 |
| | 3.00 | 1479.733 | 5074.756 | .771 | -8489.944 | 11449.411 |
| 3.00 | 1.00 | -9775.499* | 4520.332 | .031 | -18655.976 | -895.022 |
| | 2.00 | -1479.733 | 5074.756 | .771 | -11449.411 | 8489.944 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

## Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 9261851496 | 2 | 4630925748 | 4.283 | .014 |
| Error | 5.590E+11 | 517 | 1081257838 | | |

The F tests the effect of Ethnicity. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Program Manager

```
UNIANOVA AnnualSalary BY Ethnicity Education Gender WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Ethnicity Education Gender AvgYrsinStateSvc AvgYrsinStateSvc*Educati
on*Ethnicity*Gender.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Ethnicity | 1.00 | White | 699 |
| | 2.00 | Black | 272 |
| | 3.00 | Other | 23 |
| Education | 1.00 | Unknown | 52 |
| | 2.00 | K-12 | 46 |
| | 3.00 | Come College/Tech | 73 |
| | 4.00 | College/University | 781 |
| | 5.00 | Post Graduate | 42 |
| Gender | Female | | 598 |
| | Male | | 396 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 1.103E+10[a] | 32 | 344679809.4 | 3.796 | .000 |
| Intercept | 1.820E+11 | 1 | 1.820E+11 | 2005.098 | .000 |
| Ethnicity | 865599615.1 | 2 | 432799807.5 | 4.767 | .009 |
| Education | 567860057.3 | 4 | 141965014.3 | 1.564 | .182 |
| Gender | 5523.947 | 1 | 5523.947 | .000 | .994 |
| AvgYrsinStateSvc | 214065743.2 | 1 | 214065743.2 | 2.358 | .125 |
| Ethnicity * Education * Gender * AvgYrsinStateSvc | 2736644477 | 24 | 114026853.2 | 1.256 | .184 |
| Error | 8.725E+10 | 961 | 90789752.16 | | |
| Total | 4.519E+12 | 994 | | | |
| Corrected Total | 9.828E+10 | 993 | | | |

a. R Squared = .112 (Adjusted R Squared = .083)

```
UNIANOVA AnnualSalary BY Ethnicity Education Gender WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Ethnicity Education Gender AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Ethnicity | 1.00 | White | 699 |
| | 2.00 | Black | 272 |
| | 3.00 | Other | 23 |
| Education | 1.00 | Unknown | 52 |
| | 2.00 | K-12 | 46 |
| | 3.00 | Come College/Tech | 73 |
| | 4.00 | College/University | 781 |
| | 5.00 | Post Graduate | 42 |
| Gender | Female | | 598 |
| | Male | | 396 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 8293109422[a] | 8 | 1036638678 | 11.347 | .000 |
| Intercept | 4.732E+11 | 1 | 4.732E+11 | 5179.390 | .000 |
| Ethnicity | 3280287784 | 2 | 1640143892 | 17.953 | .000 |
| Education | 2509323191 | 4 | 627330797.7 | 6.867 | .000 |
| Gender | 694199504.5 | 1 | 694199504.5 | 7.599 | .006 |
| AvgYrsinStateSvc | 1363752444 | 1 | 1363752444 | 14.928 | .000 |
| Error | 8.999E+10 | 985 | 91355935.34 | | |
| Total | 4.519E+12 | 994 | | | |
| Corrected Total | 9.828E+10 | 993 | | | |

a. R Squared = .084 (Adjusted R Squared = .077)

```
CORRELATIONS
  /VARIABLES=AnnualSalary AvgYrsinStateSvc
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

## Correlations

### Correlations

| | | Annual Salary | Avg Yrs in State Svc |
|---|---|---|---|
| Annual Salary | Pearson Correlation | 1 | .097** |
| | Sig. (2-tailed) | | .002 |
| | N | 994 | 994 |
| Avg Yrs in State Svc | Pearson Correlation | .097** | 1 |
| | Sig. (2-tailed) | .002 | |
| | N | 994 | 994 |

**. Correlation is significant at the 0.01 level (2-tailed).

```
UNIANOVA AnnualSalary BY Ethnicity Education Gender WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /EMMEANS=TABLES(Ethnicity) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(Education) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(Gender) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Ethnicity Education Gender AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | Value Label | N |
|---|---|---|---|
| Ethnicity | 1.00 | White | 699 |
| | 2.00 | Black | 272 |
| | 3.00 | Other | 23 |
| Education | 1.00 | Unknown | 52 |
| | 2.00 | K-12 | 46 |
| | 3.00 | Come College/Tech | 73 |
| | 4.00 | College/University | 781 |
| | 5.00 | Post Graduate | 42 |
| Gender | Female | | 598 |
| | Male | | 396 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 8293109422[a] | 8 | 1036638678 | 11.347 | .000 |
| Intercept | 4.732E+11 | 1 | 4.732E+11 | 5179.390 | .000 |
| Ethnicity | 3280287784 | 2 | 1640143892 | 17.953 | .000 |
| Education | 2509323191 | 4 | 627330797.7 | 6.867 | .000 |
| Gender | 694199504.5 | 1 | 694199504.5 | 7.599 | .006 |
| AvgYrsinStateSvc | 1363752444 | 1 | 1363752444 | 14.928 | .000 |
| Error | 8.999E+10 | 985 | 91355935.34 | | |
| Total | 4.519E+12 | 994 | | | |
| Corrected Total | 9.828E+10 | 993 | | | |

a. R Squared = .084 (Adjusted R Squared = .077)

## Estimated Marginal Means

## 1. Ethnicity

### Estimates

Dependent Variable: Annual Salary

| Ethnicity | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| White | 68216.651[a] | 569.436 | 67099.203 | 69334.099 |
| Black | 64018.382[a] | 771.108 | 62505.179 | 65531.584 |
| Other | 66534.634[a] | 2054.169 | 62503.584 | 70565.684 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 15.093090413148598.

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Ethnicity | (J) Ethnicity | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| White | Black | 4198.269* | 701.159 | .000 | 2822.333 | 5574.206 |
| | Other | 1682.017 | 2042.494 | .410 | -2326.123 | 5690.157 |
| Black | White | -4198.269* | 701.159 | .000 | -5574.206 | -2822.333 |
| | Other | -2516.252 | 2093.136 | .230 | -6623.771 | 1591.266 |
| Other | White | -1682.017 | 2042.494 | .410 | -5690.157 | 2326.123 |
| | Black | 2516.252 | 2093.136 | .230 | -1591.266 | 6623.771 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 3280287784 | 2 | 1640143892 | 17.953 | .000 |
| Error | 8.999E+10 | 985 | 91355935.34 | | |

The F tests the effect of Ethnicity. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

## 2. Education

## Estimates

Dependent Variable: Annual Salary

| Education | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| Unknown | 66384.215[a] | 1469.797 | 63499.923 | 69268.507 |
| K-12 | 63832.045[a] | 1568.959 | 60753.159 | 66910.931 |
| Come College/Tech | 62787.665[a] | 1306.129 | 60224.549 | 65350.780 |
| College/University | 66199.590[a] | 732.454 | 64762.239 | 67636.940 |
| Post Graduate | 72079.263[a] | 1614.135 | 68911.724 | 75246.803 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 15.093090413148598.

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence [b]... |
|---|---|---|---|---|---|
| | | | | | Lower Bound |
| Unknown | K-12 | 2552.170 | 1956.364 | .192 | -1286.951 |
| | Some College/Tech | 3596.550* | 1774.333 | .043 | 114.642 |
| | College/University | 184.625 | 1390.138 | .894 | -2543.347 |
| | Post Graduate | -5695.048* | 1999.257 | .004 | -9618.341 |
| K-12 | Unknown | -2552.170 | 1956.364 | .192 | -6391.291 |
| | Some College/Tech | 1044.380 | 1803.097 | .563 | -2493.973 |
| | College/University | -2367.545 | 1452.164 | .103 | -5217.236 |
| | Post Graduate | -8247.218* | 2050.290 | .000 | -12270.656 |
| Some College/Tech | Unknown | -3596.550* | 1774.333 | .043 | -7078.458 |
| | K-12 | -1044.380 | 1803.097 | .563 | -4582.733 |
| | College/University | -3411.925* | 1177.528 | .004 | -5722.677 |
| | Post Graduate | -9291.599* | 1864.553 | .000 | -12950.552 |
| College/University | Unknown | -184.625 | 1390.138 | .894 | -2912.598 |
| | K-12 | 2367.545 | 1452.164 | .103 | -482.147 |
| | Some College/Tech | 3411.925* | 1177.528 | .004 | 1101.173 |
| | Post Graduate | -5879.674* | 1523.353 | .000 | -8869.064 |
| Post Graduate | Unknown | 5695.048* | 1999.257 | .004 | 1771.756 |
| | K-12 | 8247.218* | 2050.290 | .000 | 4223.780 |

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | 95% Confidence Interval for [b]... Upper Bound |
|---|---|---|
| Unknown | K-12 | 6391.291 |
| | Come College/Tech | 7078.458 |
| | College/University | 2912.598 |
| | Post Graduate | -1771.756 |
| K-12 | Unknown | 1286.951 |
| | Come College/Tech | 4582.733 |
| | College/University | 482.147 |
| | Post Graduate | -4223.780 |
| Come College/Tech | Unknown | -114.642 |
| | K-12 | 2493.973 |
| | College/University | -1101.173 |
| | Post Graduate | -5632.646 |
| College/University | Unknown | 2543.347 |
| | K-12 | 5217.236 |
| | Come College/Tech | 5722.677 |
| | Post Graduate | -2890.283 |
| Post Graduate | Unknown | 9618.341 |
| | K-12 | 12270.656 |

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence [b]... Lower Bound |
|---|---|---|---|---|---|
| | Come College/Tech | 9291.599* | 1864.553 | .000 | 5632.646 |
| | College/University | 5879.674* | 1523.353 | .000 | 2890.283 |

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | 95% Confidence Interval for [b]... Upper Bound |
|---|---|---|
| | Come College/Tech | 12950.552 |
| | College/University | 8869.064 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 2509323191 | 4 | 627330797.7 | 6.867 | .000 |
| Error | 8.999E+10 | 985 | 91355935.34 | | |

The F tests the effect of Education. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

## 3. Gender

### Estimates

Dependent Variable: Annual Salary

| Gender | Mean | Std. Error | 95% Confidence Interval Lower Bound | Upper Bound |
|---|---|---|---|---|
| Female | 65381.530[a] | 855.538 | 63702.644 | 67060.417 |
| Male | 67131.581[a] | 940.909 | 65285.164 | 68977.997 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 15.093090413148598.

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Gender | (J) Gender | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Female | Male | -1750.050* | 634.858 | .006 | -2995.880 | -504.220 |
| Male | Female | 1750.050* | 634.858 | .006 | 504.220 | 2995.880 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

## Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 694199504.5 | 1 | 694199504.5 | 7.599 | .006 |
| Error | 8.999E+10 | 985 | 91355935.34 | | |

The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

Trades Specialist

```
UNIANOVA AnnualSalary BY Ethnicity Gender Education WITH AvgYrsinStateSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PLOT=PROFILE(Ethnicity*Education Gender*Education) TYPE=LINE ERRORBAR=NO ME
ANREFERENCE=NO
    YAXIS=AUTO
  /EMMEANS=TABLES(Ethnicity) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(Gender) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /EMMEANS=TABLES(Education) WITH(AvgYrsinStateSvc=MEAN) COMPARE ADJ(LSD)
  /CRITERIA=ALPHA(0.05)
  /DESIGN=Ethnicity Gender Education AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

### Between-Subjects Factors

| | | N |
|---|---|---|
| Ethnicity | 1.00 | 405 |
| | 2.00 | 103 |
| | 3.00 | 17 |
| Gender | Female | 8 |
| | Male | 517 |
| Education | 1.00 | 21 |
| | 2.00 | 365 |
| | 3.00 | 119 |
| | 4.00 | 19 |
| | 5.00 | 1 |

### Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 3497661123[a] | 8 | 437207640.3 | 15.498 | .000 |
| Intercept | 3.167E+10 | 1 | 3.167E+10 | 1122.597 | .000 |
| Ethnicity | 54636535.83 | 2 | 27318267.91 | .968 | .380 |
| Gender | 74307493.56 | 1 | 74307493.56 | 2.634 | .105 |
| Education | 366539624.1 | 4 | 91634906.02 | 3.248 | .012 |
| AvgYrsinStateSvc | 2922973375 | 1 | 2922973375 | 103.610 | .000 |
| Error | 1.456E+10 | 516 | 28211333.00 | | |
| Total | 1.132E+12 | 525 | | | |
| Corrected Total | 1.805E+10 | 524 | | | |

a. R Squared = .194 (Adjusted R Squared = .181)

## Estimated Marginal Means

## 1. Ethnicity

### Estimates

Dependent Variable: Annual Salary

| Ethnicity | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| 1.00 | 47749.902[a] | 1276.245 | 45242.627 | 50257.177 |
| 2.00 | 48061.112[a] | 1356.417 | 45396.333 | 50725.891 |
| 3.00 | 49503.167[a] | 1821.808 | 45924.093 | 53082.240 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 13.366667604145830.

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Ethnicity | (J) Ethnicity | Mean Difference (I-J) | Std. Error | Sig.[a] | 95% Confidence Interval for Difference[a] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| 1.00 | 2.00 | -311.210 | 601.632 | .605 | -1493.160 | 870.740 |
| | 3.00 | -1753.265 | 1326.277 | .187 | -4358.832 | 852.302 |
| 2.00 | 1.00 | 311.210 | 601.632 | .605 | -870.740 | 1493.160 |
| | 3.00 | -1442.055 | 1421.444 | .311 | -4234.584 | 1350.475 |
| 3.00 | 1.00 | 1753.265 | 1326.277 | .187 | -852.302 | 4358.832 |
| | 2.00 | 1442.055 | 1421.444 | .311 | -1350.475 | 4234.584 |

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 54636535.83 | 2 | 27318267.91 | .968 | .380 |
| Error | 1.456E+10 | 516 | 28211333.00 | | |

The F tests the effect of Ethnicity. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

## 2. Gender

### Estimates

Dependent Variable: Annual Salary

| Gender | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| Female | 46791.825[a] | 2007.345 | 42848.251 | 50735.398 |
| Male | 50084.295[a] | 1277.947 | 47573.676 | 52594.915 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 13.366667604145830.

### Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Gender | (J) Gender | Mean Difference (I-J) | Std. Error | Sig.[a] | 95% Confidence Interval for Difference[a] | |
|---|---|---|---|---|---|---|
| | | | | | Lower Bound | Upper Bound |
| Female | Male | -3292.470 | 2028.698 | .105 | -7277.994 | 693.053 |
| Male | Female | 3292.470 | 2028.698 | .105 | -693.053 | 7277.994 |

Based on estimated marginal means

a. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

### Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 74307493.56 | 1 | 74307493.56 | 2.634 | .105 |
| Error | 1.456E+10 | 516 | 28211333.00 | | |

The F tests the effect of Gender. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

## 3. Education

### Estimates

Dependent Variable: Annual Salary

| Education | Mean | Std. Error | 95% Confidence Interval | |
|---|---|---|---|---|
| | | | Lower Bound | Upper Bound |
| 1.00 | 44484.781[a] | 1603.112 | 41335.351 | 47634.210 |
| 2.00 | 44779.273[a] | 1108.971 | 42600.621 | 46957.926 |
| 3.00 | 45825.306[a] | 1161.962 | 43542.548 | 48108.065 |
| 4.00 | 44603.871[a] | 1646.402 | 41369.396 | 47838.346 |
| 5.00 | 62497.069[a] | 5435.478 | 51818.682 | 73175.457 |

a. Covariates appearing in the model are evaluated at the following values: Avg Yrs in State Svc = 13.366667604145830.

## Pairwise Comparisons

Dependent Variable: Annual Salary

| (I) Education | (J) Education | Mean Difference (I-J) | Std. Error | Sig.[b] | 95% Confidence Interval for Difference[b] Lower Bound | Upper Bound |
|---|---|---|---|---|---|---|
| 1.00 Not Assigned | 2.00 | -294.492 | 1206.614 | .807 | -2664.972 | 2075.987 |
| | 3.00 | -1340.526 | 1272.938 | .293 | -3841.304 | 1160.253 |
| | 4.00 | -119.090 | 1681.931 | .944 | -3423.364 | 3185.185 |
| | 5.00 | -18012.289* | 5804.164 | .002 | -29414.986 | -6609.591 |
| 2.00 K-12 | 1.00 | 294.492 | 1206.614 | .807 | -2075.987 | 2664.972 |
| | 3.00 | -1046.033 | 568.583 | .066 | -2163.055 | 70.988 |
| | 4.00 | 175.402 | 1264.304 | .890 | -2308.413 | 2659.218 |
| | 5.00 | -17717.796* | 5691.586 | .002 | -28899.327 | -6536.265 |
| 3.00 Some College | 1.00 | 1340.526 | 1272.938 | .293 | -1160.253 | 3841.304 |
| | 2.00 | 1046.033 | 568.583 | .066 | -70.988 | 2163.055 |
| | 4.00 | 1221.436 | 1329.484 | .359 | -1390.431 | 3833.303 |
| | 5.00 | -16671.763* | 5697.905 | .004 | -27865.707 | -5477.819 |
| 4.00 College/ University | 1.00 | 119.090 | 1681.931 | .944 | -3185.185 | 3423.364 |
| | 2.00 | -175.402 | 1264.304 | .890 | -2659.218 | 2308.413 |
| | 3.00 | -1221.436 | 1329.484 | .359 | -3833.303 | 1390.431 |
| | 5.00 | -17893.199* | 5815.691 | .002 | -29318.543 | -6467.855 |
| 5.00 Master's J.D. Doctorate | 1.00 | 18012.289* | 5804.164 | .002 | 6609.591 | 29414.986 |
| | 2.00 | 17717.796* | 5691.586 | .002 | 6536.265 | 28899.327 |
| | 3.00 | 16671.763* | 5697.905 | .004 | 5477.819 | 27865.707 |
| | 4.00 | 17893.199* | 5815.691 | .002 | 6467.855 | 29318.543 |

Based on estimated marginal means

*. The mean difference is significant at the 0.05 level.

b. Adjustment for multiple comparisons: Least Significant Difference (equivalent to no adjustments).

## Univariate Tests

Dependent Variable: Annual Salary

| | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Contrast | 366539624.1 | 4 | 91634906.02 | 3.248 | .012 |
| Error | 1.456E+10 | 516 | 28211333.00 | | |

The F tests the effect of Education. This test is based on the linearly independent pairwise comparisons among the estimated marginal means.

```
CORRELATIONS
  /VARIABLES=AvgYrsinStateSvc AnnualSalary
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

## Correlations

**Correlations**

| | | Avg Yrs in State Svc | Annual Salary |
|---|---|---|---|
| Avg Yrs in State Svc | Pearson Correlation | 1 | .414** |
| | Sig. (2-tailed) | | .000 |
| | N | 526 | 526 |
| Annual Salary | Pearson Correlation | .414** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 526 | 526 |

**. Correlation is significant at the 0.01 level (2-tailed).

```
CORRELATIONS
  /VARIABLES=AnnualSalary Education
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

## Correlations

**Correlations**

| | | Annual Salary | Education |
|---|---|---|---|
| Annual Salary | Pearson Correlation | 1 | .051 |
| | Sig. (2-tailed) | | .247 |
| | N | 526 | 525 |
| Education | Pearson Correlation | .051 | 1 |
| | Sig. (2-tailed) | .247 | |
| | N | 525 | 525 |

```
GET DATA
  /TYPE=XLSX
  /FILE='C:\Users\poole\Desktop\CPM\Copy of CPM Trades Specialist Classificati
on.xlsx'
  /SHEET=name 'DATA'
```

```
  /CELLRANGE=FULL
  /READNAMES=ON
  /DATATYPEMIN PERCENTAGE=95.0
  /HIDDEN IGNORE=YES.
EXECUTE.
DATASET NAME DataSet1 WINDOW=FRONT.
* Encoding: UTF-8.


RECODE EthnicOrigin ('10/Not assigned'=3) ('American Indian/Alaska Native'=3)
('Asian'=3)
    ('Black/African American'=2) ('Hispanic/Latino'=3) ('Native Hawaiian/Other
 Pacfic Islander'=3)
    ('Two or More Races'=3) ('White'=1) INTO Ethnicity.
EXECUTE.

RECODE Highesteducation ('7'=1) ('4'=1) ('College/University'=4) ('Completed 1
 Year of College'=3)
    ('Completed 2 Years of College'=3) ('Completed 3 Years of College'=3) ('Co
mpleted Grade 11'=2)
    ('K-12 School'=2) ("Master's Degree"=5) ("Doctorate"=5) ("Juris Doctorate"
=5) ("Master's"=5) ('Not assigned'=1) ('Tech School/College'=3) INTO Education
.
EXECUTE.
CORRELATIONS
  /VARIABLES=AnnualSalary AvgYrsinStateSvc
  /PRINT=TWOTAIL NOSIG
  /MISSING=PAIRWISE.
```

## Correlations

```
[DataSet1]
```

**Correlations**

| | | Annual Salary | Avg Yrs in State Svc |
|---|---|---|---|
| Annual Salary | Pearson Correlation | 1 | .414** |
| | Sig. (2-tailed) | | .000 |
| | N | 526 | 526 |
| Avg Yrs in State Svc | Pearson Correlation | .414** | 1 |
| | Sig. (2-tailed) | .000 | |
| | N | 526 | 526 |

**. Correlation is significant at the 0.01 level (2-tailed).

```
UNIANOVA AnnualSalary BY Education Highesteducation Ethnicity WITH AvgYrsinSta
teSvc
  /METHOD=SSTYPE(3)
  /INTERCEPT=INCLUDE
  /PRINT PARAMETER
  /CRITERIA=ALPHA(.05)
  /DESIGN=Education Highesteducation Ethnicity AvgYrsinStateSvc.
```

## Univariate Analysis of Variance

## Between-Subjects Factors

| | | N |
|---|---|---|
| Education | 1.00 | 21 |
| | 2.00 | 365 |
| | 3.00 | 119 |
| | 4.00 | 19 |
| | 5.00 | 1 |
| Highest education | College/University | 19 |
| | Completed 1 Year of College | 14 |
| | Completed 2 Years of College | 11 |
| | Completed 3 Years of College | 6 |
| | Completed Grade 11 | 2 |
| | K-12 School | 363 |
| | Master's | 1 |
| | Not assigned | 21 |
| | Tech School/College | 88 |
| Ethnicity | 1.00 | 405 |
| | 2.00 | 103 |
| | 3.00 | 17 |

## Tests of Between-Subjects Effects

Dependent Variable: Annual Salary

| Source | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Corrected Model | 3832050055[a] | 11 | 348368186.8 | 12.565 | .000 |
| Intercept | 4.570E+10 | 1 | 4.570E+10 | 1648.257 | .000 |
| Education | .000 | 0 | . | . | . |
| Highesteducation | 408696425.3 | 4 | 102174106.3 | 3.685 | .006 |
| Ethnicity | 57401799.02 | 2 | 28700899.51 | 1.035 | .356 |
| AvgYrsinStateSvc | 2750054043 | 1 | 2750054043 | 99.192 | .000 |
| Error | 1.422E+10 | 513 | 27724481.28 | | |
| Total | 1.132E+12 | 525 | | | |
| Corrected Total | 1.805E+10 | 524 | | | |

a. R Squared = .212 (Adjusted R Squared = .195)

## Parameter Estimates

Dependent Variable: Annual Salary

| Parameter | B | Std. Error | t | Sig. | 95% ... Lower Bound |
|---|---|---|---|---|---|
| Intercept | 58851.512 | 5424.814 | 10.849 | .000 | 48193.927 |
| [Education=1.00] | -14713.780 | 5390.024 | -2.730 | .007 | -25303.017 |
| [Education=2.00] | -14408.517 | 5277.272 | -2.730 | .007 | -24776.240 |
| [Education=3.00] | -14383.535 | 5300.160 | -2.714 | .007 | -24796.225 |
| [Education=4.00] | -14599.080 | 5402.766 | -2.702 | .007 | -25213.348 |
| [Education=5.00] | 0[a] | . | . | . | . |
| [Highesteducation=College/ University] | 0[a] | . | . | . | . |
| [Highesteducation=Completed 1 Year of College] | 3601.756 | 1525.970 | 2.360 | .019 | 603.837 |
| [Highesteducation=Completed 2 Years of College] | 2394.839 | 1684.297 | 1.422 | .156 | -914.129 |
| [Highesteducation=Completed 3 Years of College] | 6836.694 | 2224.773 | 3.073 | .002 | 2465.908 |
| [Highesteducation=Completed Grade 11] | 984.579 | 3736.775 | .263 | .792 | -6356.686 |
| [Highesteducation=K-12 School] | 0[a] | . | . | . | . |
| [Highesteducation=Master's ] | 0[a] | . | . | . | . |
| [Highesteducation=Not assigned] | 0[a] | . | . | . | . |
| [Highesteducation=Tech School/College] | 0[a] | . | . | . | . |
| [Ethnicity=1.00] | -1858.000 | 1315.060 | -1.413 | .158 | -4441.564 |
| [Ethnicity=2.00] | -1641.885 | 1409.129 | -1.165 | .244 | -4410.258 |
| [Ethnicity=3.00] | 0[a] | . | . | . | . |
| AvgYrsinStateSvc | 234.020 | 23.497 | 9.960 | .000 | 187.857 |

## Parameter Estimates

Dependent Variable: Annual Salary

| Parameter | 95% Confidence . Upper Bound |
|---|---|
| Intercept | 69509.097 |
| [Education=1.00] | -4124.543 |
| [Education=2.00] | -4040.793 |
| [Education=3.00] | -3970.845 |
| [Education=4.00] | -3984.811 |
| [Education=5.00] | . |
| [Highesteducation=College/ University] | . |
| [Highesteducation=Completed 1 Year of College] | 6599.675 |
| [Highesteducation=Completed 2 Years of College] | 5703.807 |
| [Highesteducation=Completed 3 Years of College] | 11207.480 |
| [Highesteducation=Completed Grade 11] | 8325.844 |
| [Highesteducation=K-12 School] | . |
| [Highesteducation=Master's ] | . |
| [Highesteducation=Not assigned] | . |
| [Highesteducation=Tech School/College] | . |
| [Ethnicity=1.00] | 725.565 |
| [Ethnicity=2.00] | 1126.489 |
| [Ethnicity=3.00] | . |
| AvgYrsinStateSvc | 280.182 |

a. This parameter is set to zero because it is redundant.